

Remarks

Claims 1-113 were pending in the application. Claims 1-9, 11-13, 15, 19, 21-24, 27, 29, 30, 32, 36, 45-48, 50-53, 61, 67, 70-72, and 76-81 were rejected. No claims were merely objected to and no claims were allowed. By the foregoing amendment, claims 1-113 are canceled and claims 114-192 are added. No new matter is presented.

Support for claim 114 is found in of former claim 13.

Support for claim 115 is found in former claim 81.

Support for claim 116 is found in former claim 53.

Support for claim 117 is found in paragraphs [0088] and [0089] of the specification.

Support for claim 118 is found in paragraphs [0084] and [0086] of the specification.

Support for claim 119 is found in paragraphs [0084] of the specification.

Support for claim 120 is found in paragraphs [0084] and [0086] of the specification.

Support for claim 121 is found in former claim 34. *not elected*

Support for claim 122 is found in former claim 79.

Support for claim 123 is found in former claim 80.

Support for claim 124 is found in former claim 12.

Support for claim 125 is found in former claim 33 and in paragraph [0088] of the specification. *not elected*

Support for claim 126 is found in former claim 82. *not elected*

Support for claim 127 is found in former claim 7.

Support for claim 128 is found in former claim 15.

Support for claim 129 is found in former claim 79.

Support for claim 130 is found in former claim 53.

Support for claim 131 is found in former claim 21.

Support for claim 132 is found in former claim 46.

Support for claim 133 is found in former claim 76.

Support for claim 134 is found in former claim 77.

Support for claim 135 is found in former claim 78.

Support for claim 136 is found in former claim 52.

Support for claim 137 is found in former claim 53.

Support for claim 138 is found in former claim 54.

Support for claim 139 is found in former claim 55.

Support for claim 140 is found in former claim 73.

Support for claim 141 is found in former claim 74.

Support for claim 142 is found in former claim 75.

Support for claim 143 is found in former claim 35.

Support for claim 144 is found in former claim 66.

Support for claim 145 is found in former claim 66.

Support for claim 146 is found in former claim 3.

Support for claim 147 is found in former claim 51.

Support for claim 148 is found in former claim 64.

Support for claim 149 is found in former claim 64.

Support for claim 150 is found in former claim 45.

Support for claim 151 is found in former claim 14.

Support for claim 152 is found in former claim 10.

Support for claim 153 is found in former claim 17.

Support for claim 154 is found in former claim 28.

Support for claim 155 is found in former claim 52.

Support for claim 156 is found in former claim 47.

Support for claim 157 is found in former claim 48.

Support for claim 158 is found in former claim 68.

Support for claim 159 is found in former claim 70 and paragraphs [0099] and [0100] of the specification.

Support for claim 160 is found in former claim 71 and paragraphs [0099] and [0100] of the specification.

Support for claim 161 is found in former claim 60 and paragraph [0060] of the specification.

Support for claim 162 is found in former claim 20.

Support for claim 163 is found in former claim 21.

Support for claim 164 is found in former claim 22.

Support for claim 165 is found in former claim 23.


Support for claim 166 is found in former claim 24.

Support for claim 167 is found in former claim 31. *not elected*

Support for claim 168 is found in former claim 32.

Support for claim 169 is found in paragraphs [0079] and [0083] through [0086] of the specification.

Support for claim 170 is found in former claim 61.

Support for claim 171 is found in former claim 86 and paragraphs [0012] and [0013] of the specification. 

Support for claim 172 is found in former claim 88 and paragraphs [0012] and [0013] of the specification.

Support for claim 173 is found in former claim 91 and paragraphs [0012] and [0013] of the specification. *not elected*


Support for claim 174 is found in former claim 92 and paragraph [0014] of the specification.

Support for claim 175 is found in former claim 87.

Support for claim 176 is found in former claim 93 (polymeric material) and former claim 47 (longitudinal engagement region).

Support for claim 177 is found in former claim 98.

Support for claim 178 is found in former claim 96.

Support for claim 179 is found in former claim 97. 

Support for claim 180 is found in former claim 47 (longitudinal engagement region) and former claim 11 (longitudinal sidewalls).

Support for claim 181 is found in of former claim 48.

Support for claim 182 is found in of former claim 26. *not elected*

Support for claim 183 is found in of former claim 65. *not elected*

Support for claim 184 is found in of former claim 44. *ditto*

Support for claim 185 is found in of former claim 29.

Support for claim 186 is found in of former claim 36.

Support for claim 187 is found in of former claim 43. *not elected*

Support for claim 188 is found in of former claim 38. *ditto*

Support for claim 189 is found in of former claim 39. *ditto*

Support for claim 190 is found in of former claim 40.

Support for claim 191 is found in of former claim 41.

Support for claim 192 is found in of former claim 42.

} *not elected*

New claims 114 – 120, 122 – 124, 127 – 137, 146 – 147, 150, 156 – 158, 163 – 166, 168 – 171, 175 – 178, 180 – 181 are directed to the elected invention/species. Dependent claims 121, 125, 126, 138 – 145, 148 – 149, 151 – 155, 159 – 162, 167, 172 – 174, 179, 182 – 192 are directed to nonelected species.

Interview Summary

Applicant appreciates the courtesy of a telephone interview held March 27, 2003 involving inventor Raphael Schlanger, attorney William Slate, Examiner Jason Bellinger, and Primary Examiner Russell Stormer.

Several issues were discussed.

First, new claims 114 and 115 were discussed as the applicant's proposed independent versions of allowable claims 13 and 81. The examiner questioned the use of the term "flange" as inconsistent with the elected species, asserting the term required a radially-protruding structure. The inventor indicated that the specification contained an alternate identification. The attorney and the examiner agreed that the attorney would confirm and identify this alternate identification or would amend the term to identify "spoke-mounting portion". The identification is discussed in the section following. In any event, at the suggestion of the primary examiner, the examiner indicated an intention to conduct a further search regarding these claims and, if appropriate, issue a non-final action reflecting the search results.

The possibility of adding a claim directed to a method for assembling a wheel was discussed.

The claim would identify a spoke insertion process and a pretensioning of the spokes. The claim would identify that the insertion process causes a deformation of at least one of a first portion of the spoke and the mating rim/hub by the other of the two. The examiner indicated that this would be a separate invention in class 29 and would not be examined except in a continuing application.

Independent claims with several alternative additional elements to distinguish the citations of Blean and Savene were also discussed. One area involved the nature of the connection between the spoke and the associated flange (or rim). The attorney proposed identifying this as an interference fit or via one element holding the other in a deformed condition. The examiner queried whether such could be the case with the elected species. The examiner asserted that it appeared the threading of the elected species would not involve interference fit or deformation. The attorney and inventor noted the difference between clearance threading and interference threading involving deformation such as in certain locknut situations. The examiner queried whether the specification supported such an interpretation and the inventor and attorney agreed to investigate. The attorney and inventor also indicated that identifying the spokes as "pretensioned" would distinguish Blean and Savene, asserting that neither discloses pretensioned spokes. The Examiner asserted that pretensioning was inherent in wheels such as Blean and Savene. The attorney and inventor indicated they would provide appropriate counterargument.

No other agreement was reached.

Election/Restriction

In the Office action, the examiner acknowledged the election of species III drawn to Figures 8a and 8b.

The examiner withdrew claims 10, 14, 16-18, 20, 25-26, 28, 31, 33-34, 37-44, 49, 54-60, 63-66, 68-69, 73, 75, 82-85, 87, 90-91, 93-113 from further consideration as being drawn to non-elected species and subspecies.

The examiner withdrew claims 35, 70-71, 74, 86, 88-89, and 92 from further consideration as being drawn to non-elected species and subspecies.

Specification

The examiner objected to the disclosure due to enumerated informalities. By the foregoing amendment, these have been corrected as helpfully proposed by the examiner.

Claim Objections

The Examiner objected to claims 2, 50, and 67 for enumerated informalities. By the foregoing amendment, these have been corrected in the added claims as helpfully proposed by the examiner.

Allowable Subject Matter

Applicant appreciates the indication of allowable subject matter in claims 13 and 81. These are represented as new claims 114 and 115. To address the section 112 rejection regarding the term "joinder", this term has been replaced with "deformed engagement" for antecedent basis. Regarding the examiner interview question of the definition of the term "flange", the examiner's attention is directed to the last two sentences of paragraph 0080 on page 5 of the present application as published. While the examiner's attention is drawn to that page of the application, it is also

convenient to note the discussion at paragraphs 0083-0086 indicating how a threaded engagement can involve deformation. Paragraph 0083 identifies, in the vicinity of line 13 of page 6, how the cavity is deformed. Paragraph 0084, approximately half way down, identifies the possibility of "both plastic and elastic deformation." The elastic component is identified as adding "a gripping action between the cavity 20 and the spoke to prevent unthreading." The deformation provides an interference fit situation. Other interference fit situations are possible such as via the "raked edges" of paragraph 0088 and the "smooth interference-fit engagement" of paragraph 0090. This limited smooth interference-fit situation may be more of what the examiner considered to be an interference-fit during the interview. Nevertheless, the specification supports a broader reading of the term.

Claim Rejections-35 U.S.C. 112

The examiner rejected claims 1-9, 11-13, 15, 19, 21-24, 27, 29-30, 32, 36, 45-48, 50-53, 61, 67, 70-72 and 76-81 under 35 U.S.C. 112(2) for asserted informalities in claims 1, 3, 21, 27, 36, 61 and 79. By the foregoing amendment, these have been eliminated or corrected.

Claim Rejections-35 U.S.C. 102

The examiner rejected claims 1-6, 8-9, 11-12, 15, 19, 21-23, 27, 29, 32, 36, 45-46, 52, 67, 72 and 76-77 as being anticipated by Blean (U.S. Patent No. 918,118). Applicant respectfully traverses the rejection.

Claim 124 identifies a deformed engagement. Nothing about the engagement of Blean is deformed. Blean identifies using a press to form a rivet-like head on the spoke. Although this

heading process deforms the spoke, it cannot be said that the engagement which joins the spoke to the associated one of the flange and rim is a deformed engagement. Claim 124 further identifies the spokes as pretensioned. Blean fails to suggest this. Blean discloses spokes having preformed heads at their outboard ends (item b in Fig. 3) and unheaded inboard ends (item b¹). The inboard ends are headed by means of a rivet press. No discussion of pretensioning is provided.

Furthermore, it is noted that Blean identifies the application of a "clip a¹" applied to ends of the rim only after the spokes are attached (page 1, lines 104-106). This is not consistent with there being pretension in the spokes. Applicant notes the distinction between pretension (see, e.g., paragraphs 0078 and 0082) and tension under load. A wheel without pretensioned spokes may find certain spokes going into tension under static and/or dynamic load. Furthermore, Blean fails to teach means for adjusting spoke tension as specified in new claim 127 for which support is found in claim 7.

Without prejudice to the patentability of the other dependent claims, it is noted that Blean clearly teaches neither the forming of a cavity in a polymeric element of claim 129 nor the threading of the spoke in the engagement region of claim 130.

In a similar vein, Blean fails to identify the claimed interference fit of claim 132 and maintenance of a deformed condition of claim 169.

In addition to the deformed engagement discussed above with respect to claim 124, claim 146 identifies a gripping and locating engagement for which support is found in claim 3 and the gripping action is elaborated upon in paragraph 0084. Blean also fails to teach the claimed longitudinal depth of engagement of dependent claim 156 and further refined in claim 157, for which support is found in claims 47 and 48.

Independent claims 176 and 180 similarly identify particular longitudinal extents of deformed engagement for which no suggestion is provided in Blean or the other references.

In yet a further refinement of the deformed engagement discussed above, claim 169 states that the cavity engages the joined spoke to maintain at least one of the cavity and the joined spoke in a deformed condition. No such maintenance is identified in Blean. Support for this is found in the discussion of elastic deformation at paragraph 0086.

The examiner rejected claims 1-6, 8-9, 19, 21-24, 27, 29-30, 32, 36, 47-48, 50-52, 61, 72 and 76-78 as being anticipated by Savene (U.S. 377,579). Applicant respectfully traverses the rejection.

As with Blean, Savene fails to disclose deformed engagement, interference fit, and pretensioning. It is clearly evident from Fig. 2 that the inboard spoke ends of Savene are preformed with hook elements rather than being deformed by the engagement. Additionally, Savene identifies the use of collars F "preventing [inward] displacement of the" spokes. Page 1, line 77. It is not clear how, if the spokes were pretensioned, they would need such a collar.

Claims Rejections- 35 U.S.C. 103

The examiner rejected claim 7 under 35 U.S.C 103(a) as being unpatentable over Blean (U.S. Patent No. 918,118) in view of Lacombe et al. (U.S. Patent No. 6,189,978). Applicant respectfully traverses the rejection.

Lacombe et al. was cited for tension adjustment means. Accordingly, this rejection is taken as applicable to present claims reciting pretensioning and tension adjustment means. The examiner cited no source for the asserted motivation to combine of allowing "all the spokes to be adjusted to

provide a balanced wheel..." There is simply no suggestion that one of ordinary skill in the art aware of Blean and Lacombe et al. would, for some reason, choose to make Blean the starting point for any modifications in view of Lacombe et al. Furthermore, the proposed modification of Blean would alter the basic character of Blean.

The examiner rejected claims 53 and 61 under 35 U.S.C. 103(a) as being unpatentable over Blean in view of Rasmussen (U.S. Patent No. 5,487,592). Applicant respectfully traverses the rejection.

The examiner failed to identify Rasmussen as having a situation where the spoke threads create the deformation of the cavity as was specified in claim 53. Similarly, as applied to present claims such as 116, there is no suggestion for the threading associated with the deformed engagement. As with the foregoing rejection, there is no citation for a motivation to combine and no plausible reason why one would choose Blean as a starting point. Furthermore, as with the foregoing rejection, the proposed modification would fundamentally alter the basic character (construction and operation) of Blean.

The examiner rejected claim 79 under 35 U.S.C. 103(a) as being unpatentable over Blean in view of Thompson, Jr. (U.S. Patent No. 3,865,220). Applicant respectfully traverses the rejection.

Claim 79 had identified polymeric material. Accordingly, the rejection is treated as applicable to present claims including polymeric material. No source was cited for the asserted motivation to combine. As with the foregoing rejections, there is no suggestion for the use of Blean as a starting point. Additionally, it is noted that this combination clearly is counter to any concept

that the spoke of a Blean or Savene-like reference is deformed by the hub.

The examiner rejected claim 80 under 35 U.S.C. 103(a) as being unpatentable over Blean in view of Thompson, Jr. and further in view of Fujisaki et al. (U.S. Patent No. 4,483,729). Applicant respectfully traverses the rejection.

Fujisaki et al. teaches a fiber reinforced rim. There is no suggestion for use of this material in the hub of Thompson, Jr. as applied to Blean, as discussed immediately above.

The examiner rejected claim 7 under 35 U.S.C. 103(a) as being unpatentable over Savene in view of Lacombe et al. Applicant respectfully traverses the rejection.

Applicant submits the combination of Savene and Lacombe et al. is improper for the same reasons as is the combination of Blean and Lacombe et al. The examiner has cited no source for the motivation nor has the examiner cited a reason why one of ordinary skill in the art would chose Savene as a starting point.

The examiner rejected claim 79 under 35 U.S.C. 103(a) as being unpatentable over Savene in view of Thompson, Jr. Applicant respectfully traverses the rejection.

For the reasons discussed with respect to the Thompson, Jr. and Blean rejection and Lacombe et al. and Savene rejection, Applicant submits the rejection is insufficient.

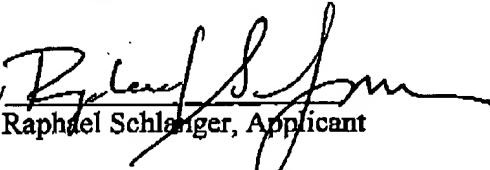
The examiner rejected claim 80 under 35 U.S.C. 103(a) as being unpatentable over Savene in view of Thompson, Jr. as applied to claim 79 and further in view of Fujisaki et al. Applicant respectfully traverses the rejection.

As with the foregoing rejections involving Savene and the rejection over Blean in view of Thompson, Jr. and Fujisaki et al., applicant submits the rejection is insufficient and overcome as to the new claims.

Accordingly, Applicant submits that claims 114-192 are in condition for allowance.

Respectfully submitted,

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